

RESPONSE UNDER 37 C.F.R. § 1.116
Application No. 10/516,710
Attorney Docket No. Q70519

Applicants submit that WO '098 and Ishii et al '415 do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

The present invention as set forth in independent claim 1 is directed to a powder comprising silica-coated zinc oxide fine particles in which the surface of each particle is coated with silica, wherein large particles of 5 μm or more account for 0.1 mass% or less and this amount is obtained by a dry-format classification.

In another embodiment of the present invention as set forth in independent claim 2, the present invention is directed to a powder comprising surface-hydrophobicized silica-coated zinc oxide fine particles in which the silica-coated zinc oxide fine particles whose surfaces have been coated with silica are further treated with a hydrophobicity-imparting agent, wherein large particles of 5 μm or more account for 0.1 mass% or less and this amount is obtained by a dry-format classification.

Thus, as set forth in claims 1 and 2, applicants employ a dry-format classification to obtain the particles of the present invention. Neither WO '098 nor Ishii et al '415 disclose a dry-format classification to obtain particles.

In WO '098 and Ishii et al '415, the produced silica-coated zinc oxide particles were reduced in size by grinding in a jet milling, which is described in Production Examples 3 and 4. (See page 46, lines 19-20 and page 47, lines 14-15 of WO '098 and column 15, lines 26-28 and 49-50 of Ishii et al '415.)

In contrast, the silica-coated zinc oxide fine particles of the present invention are obtained through a dry-format classification.

Therefore, the particles of W0 '098 and Ishii et al '415 are different from the particles of the present invention.

As described on page 19, lines 6-15 of the present specification:

Intensive milling attained by use of a jet mill may be effective for reducing the level of aggregation of particles. However, such intensive milling may cause partial breakage of silica coating or create new surfaces (i.e., zinc oxide surfaces) as a result of milling of surface-treated products of large zinc oxide particles. (Emphasis added). These are not preferred because processability and weather resistance of organic polymer composition containing such intensive milled particles are deteriorated.

Thus, the particles of the present invention are superior to the particles of W0 '098 and Ishii et al '415 in their properties, such as the processability and weather resistance of an organic polymer composition containing the particles.

The object of the present invention is described on page 3, line 23 to page 4, line 1 of the present specification, as follows:

. . . provision of a powder containing finely divided, specific silica-coated zinc oxide particles containing a smaller number of large particles which ensure facilitated shaping of thin film, thin fiber, or similar products which are free from impaired weather resistance which would otherwise be attributable to photocatalytic action and which are endowed with sufficient UV shielding ability; organic polymer compositions containing such powder; and shaped products formed from the composition.

. . . provision of the powder, organic polymer compositions comprising such powder; and shaped products formed from the compositions, which are free from a bleed-out phenomenon, unlike an organic UV absorber, and have good durability against washing.

These objects are not attained or suggested from the teachings of W0 '098 and Ishii et al '415.

In the present Office Action, the Examiner states that how the prior art references obtained the particle size distribution that is disclosed in the references, as opposed to applicants' dry-format classification, is an irrelevant issue regarding the product claims that are in the present application.

In response, applicants disagree with the Examiner's position that how the prior art references obtained the particle size distribution as opposed to applicants' dry-format classification is an irrelevant issue regarding product claims.

The recitation in the present claims that the particles are "obtained by a dry-format classification" is a restriction of the product, which differentiates the particle of the present invention from the particles of WO '098 and Ishii et al '415 which are obtained by jet milling.

The particles obtained through dry-format classification are essentially different from the particles obtained by jet milling, in their particle structure. Although the product of the present invention is restricted by using a process recitation, the product itself is limited by the process recitation and is distinguished from the particles obtained through a jet milling process.

If different processes produce the same product, then applicants admit that the process limitation used is irrelevant to the product claim. However, in the present invention, the dry-format classification produces particles which are different, as the product, from particles obtained through jet milling.

For example, particles obtained through jet milling have partial breakage of silica coating or created new surfaces, as disclosed at the above-quoted discussion at page 19, lines 6-15 of the present specification, while the particles of the present invention do not have such partial

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breakage of silica coating or created new surfaces. The Examiner's judgment or understanding of the product of the present invention is not correct.

The present invention is an improvement of the silica-coated zinc oxide powder that is disclosed WO '098 and Ishii et al '415.

The present inventors found that jet milling may cause partial breakage of silica coating or created new surfaces (i.e., zinc oxide surfaces) as a result of the milling of surface-treated products of large zinc oxide particles.

The present invention solved these problems by obtaining particles through dry-format classification.

In support of applicants' position that the particles of the present invention are different from particles obtained by jet milling as in WO '098 and Ishii et al '415, applicants refer the Examiner to the Examples and Comparative Example 6 of the present specification, and the results for these examples which are summarized in Table 3 at page 54 of the specification. Comparative Example 6, described at page 53 of the specification, employed particles obtained through jet milling, as in WO '098 and Ishii et al '415. Table 3 shows that the weather resistance of the particles of Comparative Example 6 obtained through jet milling is 3.5. In contrast, Table 3 shows that the weather resistance of the particles of Examples 1-4 of the present invention is 0.2-0.4. Example 1 of the present invention is directly comparable to Comparative Example 6.

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Thus, the particles of the present invention are essentially different from the particles of WO '098 and Ishii et al '415, and the effect of the present invention is not expected or obvious from WO '098 and Ishii et al '415.

In view of the above, applicants submit that claims 1-26 are patentable over WO '098 and Ishii et al and, accordingly, request withdrawal of this rejection.

Claims 20-26 have been rejected under 35 U.S.C. § 103(a) as obvious over WO '098 or Ishii et al '415 in view of JP 2000-319128 to Takeshi.

Claims 20-26 depend, either directly or indirectly, from claims 1 or 2.

JP '128 does not disclose or suggest the dry classification set forth in claims 1 and 2 and, therefore, does not supply the deficiencies of WO '098 and Ishii et al '415.

In view of the above, applicants submit that claims 20-26 are patentable over the cited prior art and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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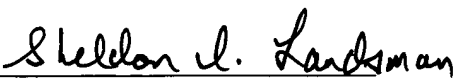
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